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To Christopher Lichens/R9/USEPA/US@EPA
cc Stan Smucker/R9/USEPA/US@EPA,
Richard.Braun@CH2M.com
bcc
Subject eeeca outline comments

Chris,

Attached are our comments (pdf), prepared by Rich Braun after his discussion with Stan Smucker. I transferred them also into your WP letter. I don't have any comments other than what we discussed yesterday and you already noted in the letter.

Regards,



Tom eeeca outline 3.11.05 comment letter - CH2M HILL.wpd CDM EECA Draft Outline 031103-review comments 031705 pdf

Review Comments on Preliminary Draft Engineering Evaluation and Cost Analysis (EE/CA) Omega Chemical Site Annotated Outline, March 11, 2005

TO: Christopher Lichens/USEPA Region IX

FROM: Tom Perina/CH2M HILL, Riverside
Richard Braun/CH2M HILL, Santa Ana

DATE: March 17, 2005

As you requested, CH2M HILL reviewed the document prepared by Camp Dresser & McKee, Inc. (CDM), dated March 11, 2005 (the document shows 2003 but the correct date should be 2005), titled *Preliminary Draft-For Discussion Purposes Only Engineering Evaluation and Cost Analysis (EE/CA) Omega Chemical Site Annotated Outline*.

Consistent with the oversight role of the U.S. Environmental Protection Agency (EPA), this technical memorandum presents recommendations that CH2M HILL believes will streamline and improve the project. The goal of this review is to confirm that the approach to the investigation is appropriate and consistent with the goals at this site and is consistent with typical industry practices.

This review lists comments sequentially as noted in the document. Editing-level issues are not addressed in this review.

These comments are in addition to the March 17, 2005 comments prepared by Christopher Lichens.

Comments:

1. **Section 3.3, Summary of Risk Assessment.** The EE/CA guidance document "Guidance on Conduction Non-time-Critical Removal Actions Under CERCLA" (EPA/540-R-93-057, August 1993) includes the "Streamlined Risk Evaluation" as part of the Site Characterization. It is recommended that the current **Section 3.3, Summary of Risk Assessment** be renamed "Streamlined Risk Evaluation" and be moved to **Section 2.0, Site Characterization Summary** as **Section 2.4, Streamlined Risk Evaluation**.
2. **Section 2.4 Streamlined Risk Evaluation.** As indicated in the EE/CA guidance, a streamlined risk evaluation will need to be prepared as part of the EE/CA (see page 29-30 of EE/CA guidance document). In the streamlined risk evaluation, available Omega Phase 1a Area groundwater characterization data can be compared to existing health- or risk-based standards to determine the nature of the threat to public health, welfare or the environment. The results of the streamlined risk evaluation can help justify taking a removal action and identify (and document) what current or potential exposures should be prevented.

The streamlined risk evaluation identifies the contaminants of concern, provides an estimate of how and to what extent people might be exposed to these chemicals, and provides an assessment of the health effects associated with these chemicals. It projects the potential risk of health problems occurring if no cleanup action is taken. Therefore, the results of the streamlined risk evaluation help EPA decide whether to take a cleanup action at the site, what exposures need to be addressed by the action, and in some cases define the appropriate cleanup levels.

For the EE/CA the streamlined risk evaluation should focus on the specific problem that the removal action is intended to address. For example, if the removal action is to install a groundwater containment system, the risk evaluation should address risk due to consumption and use of groundwater. If the action is intended to address a particular source of contamination, the risk evaluation should address the risks related only to that source of contamination.

Exposure pathways can be identified as an obvious threat to human health or the environment by comparing EE/CA contaminant concentrations to standards that are potential chemical-specific ARARs for the action. These may include, for Omega Phase 1a Area, Maximum Contaminant Levels (MCLs) for groundwater. When potential ARARs for chemicals do not exist for a specific contaminate, risk based chemical concentrations should be used (i.e., for the Omega Phase 1a Area groundwater the Region 9 Tap Water PRGs).

For the Omega Phase 1a Streamlined Risk Evaluation the following are recommended:

- Compare the groundwater chemical concentrations in Phase 1a Area wells to MCLs (Federal and State of California) and to current Region 9 Tap Water PRGs.
- Cumulative human health risks and hazards for chemicals in groundwater in the Phase 1a Area can be efficiently estimated using Region 9 PRGs by applying the stepwise risk ratio approach, which is described in the 2004 Users Guide for the Region 9 PRGs Table (on pages 14 and 15). This approach can be used for each well in the Phase 1a Area (or the wells that are most highly impacted).
 - Cancer Risk. For cancer risk estimates, take the site-specific chemical concentration and divide by the Region 9 PRG concentrations that are designated for cancer evaluation ("ca"). Multiply this ratio by 10^{-6} to estimate chemical-specific risk for a reasonable maximum exposure (RME). For multiple chemicals, simply add the risk for each chemical.
 - Noncancer hazard. For non-cancer hazard estimates, divide the chemical concentration term by its respective non-cancer Region 9 PRG designated as "nc" and sum the ratios for multiple contaminants. The cumulative ratio represents a non-carcinogenic hazard index (HI). A hazard index of 1 or less is generally considered "safe". A ratio greater than 1 suggests further evaluation.
- The cumulative risks (and hazards) for all wells can be plotted as risk isopleths on site plots of the Phase 1a Area.

3. **Section 4.2.1 Effectiveness.** How well each alternative protects public health and the environment should be discussed in a consistent manner. This discussion draws on assessments conducted under other evaluation criteria (including the streamlined risk evaluation). It is recommended that the following from the EE/CA guidance (Page 36) be annotated to this subsection:

- Protectiveness
 - Protective of public health and community
 - Protective of workers during implementation
 - Protective of the environment
 - Complies with ARARs